

160646

Tuesday, May 02, 2017 2:08:13 PM

N900040100

Setup Start *NS1*

Stop *NS2*

Start Date: 5/15/2017 **Start Qty:** 2.00 ***2***

Cust Item ID:

Required Date: 5/19/2017 **Req'd Qty:** 2.00 ***~***

Customer:

Reference: SCHEDULED/S

Approvals: Process Plan: [Signature] Date: MAY 02 2017

Tooling: _____ **Date:** _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

[illegible]

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Work Order ID 160646

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Item ID: D412-711-101 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Replacement Vertical Reference Window
Start Date: 5/15/2017 Start Qty: 2.00 *?
Required Date: 5/19/2017 Req'd Qty: 2.00 *?
Reference: SCHEDULED/S
Cust Item ID:
Customer:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130 *130* Thermoform Thermoforming Machine	THERMOFORMING MACHINE Memo Thermoform as per Dwg. D412-711-101 using DT 9640 and Folio FTA 077 Dwg. Rev. _____ Folio Rev. _____ Visually inspect for proper formation and clarity Visually and inspect magic eye Verified by: _____	0.00 1.56				<u>3</u>			DAS 07 9-89 17/05/03
160 *160* HandThermo Hand Finishing Thermoforming	HAND FINISHING THERMOFORMING Memo 1) Trim off excess flange material 2) Buff out any light scratches or 3) Etch part number and batch number	0.00 2.38				<u>2</u>			DAS 07 9-89 17/05/18

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
100% 50 00-7								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐				
OTHER : ☐									

Work Order ID 160646

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Item ID: D412-711-101

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Replacement Vertical Reference Window

Start Date: 5/15/2017 Start Qty: 2.00

2

Cust Item ID:

Required Date: 5/19/2017 Req'd Qty: 2.00

2

Customer:

Reference: SCHEDULED/S

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
170	QC2- Inspect parts off machine FAI/FAIB	0.00							DPS 07 9-89
170									
QC	Memo	0.02							
Quality Control	1) Visually inspect for clarity, and proper formation.								17/05/18
180	QC5- Inspect part completeness to step on W/O	0.00							
180									
QC	Memo	0.04							
Quality Control	1) Visually inspect for clarity, and proper formation.								17-05-19 PTD
185	QC4- 100% Inspect kits for completeness	0.00							
185									
QC	Memo	0.06							
Quality Control									DAS 28 9-89 MAY 19 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☒ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☒ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : <u>17-05-19</u>		Step #: <u>130</u>		QTY Effective : <u>1</u>			MRB (QSI042) Approval <u>PD</u> <u>17-05-19</u>		
Description Work Order Deviation				Disposition				Completed By	
<u>1 window scrap cause plastic is touching mold and causing distortion in window</u>				<u>1 scrap / destroy</u> <u>no replace</u>				<u>Whe</u> <u>17/05/19</u>	
								Lead hand / Supervisor Approval Verification	
								<u>JP</u> <u>17-05-19</u>	
QC / QA Coordinator Approval				<u>17-05-19</u>					

Root Cause			FAULT CATEGORY							
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong
Design	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☒	Finish
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence
Past Expiry Date	☐	☒ Manufacturing Process	OTHER : _____							
Misidentified	☐	Past Due								

Work Order ID 160646

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Item ID: D412-711-101 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Replacement Vertical Reference Window
Start Date: 5/15/2017 Start Qty: 2.00 ***2*** Cust Item ID:
Required Date: 5/19/2017 Req'd Qty: 2.00 ***2*** Customer:
Reference: SCHEDULED/S

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190	Identify as per dwg & Stock Location: _____	0.00							
190									
Packaging	Memo	0.02				1	DAS 28 3-89	MAY 19 2017	
Packaging	Location : FG099								
200	QC21- Final Inspection - Work Order Release	0.00							
200									
QC	Memo	0.20							
Quality Control									



MAY 19 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
55								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	OTHER : ☐			

Picklist Print

Tuesday, May 02, 2017 2:08:13 PM

Page 1

Work Order ID: 160646

160646

Parent Item: D412-711-101

D412-711-101

Parent Item Name: Replacement Vertical Reference Window

Start Date: 5/15/2017

Required Date: 5/19/2017

Start Qty: 2.00

Required Qty: 2.00

Comments: IPP Rev:A New Issue 06-02-01 JLM
Manufacture in-house 10/06/28 DL

IPP Rev. B.

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
MACRLICS.236		Purchased	No			110	sf	316.9944	16	42.66667			DAS 07 9-89

MACRLICS 236

Plexiglass G 0.236"

17/05/18

Location

Loc Qty

Loc Code

therm

316.9943688

M134733

30.9089733

M135485

0.0009155

M135775

62.08448

M135914

160

M137404

64

21.336 sg Pf

21.332 sg Pf

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : ☐					

DART AEROSPACE LTD		Work Order:	
Description: Replacement Window		Part Number:	D412-711-101
Inspection Dwg: D412-711-101	Rev: B	Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST
THERMOFORMING SECTION

Description	Accept	Reject	Method of Inspection	Comments
Inside Radii less than <u>N/A</u> "				
Shape Definition	✓			
Texture Retention	✓			
Material imperfections such as bumps, cracks, voids, scratching	✓			

Measured by:	DAS 07 9-89	Date:	17/05/03
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TRIMMING SECTION

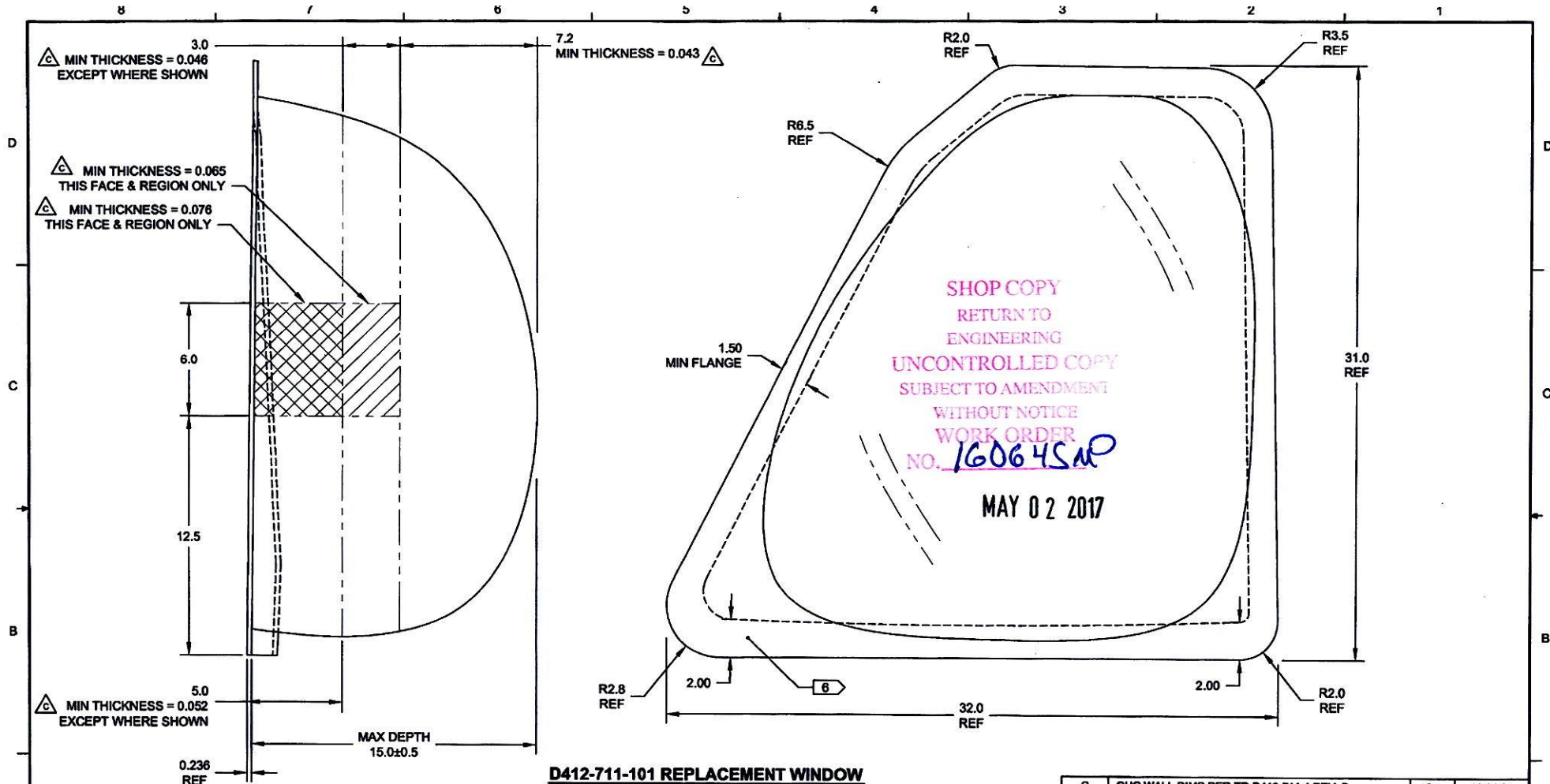
Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
2.00	+/-0.030	<u>2.00</u> "	✓			
<u>1.98</u> <u>N/A</u>	+/-0.030					
1.50	Min	<u>1.56</u> "	✓			
0.090	Min	<u>0.109</u> "	✓			
0.070	Min	<u>0.099</u> "	✓			
0.050	Min	<u>0.071</u> "	✓			
15.0	+/-0.5	<u>15.1</u> "	✓			

Measured by:	DAS 07 9-89	Date:	17/05/03
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Audited by:		Date:	
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Preliminary Approval:		Date:	
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Rev	Date	Change	Revised by	Approved
B	10.10.08	New Issue	KJ	
C	13.06.03	Dimensions updated per Dwg Rev B	KJ	



D412-711-101 REPLACEMENT WINDOW

- NOTES:**
- 1) MATERIAL: PLEXIGLAS G CLEAR CAST ACRYLIC SHEET PER LP-391 TYPE 1 GRADE C OR POLYCAST II CLEAR ACRYLIC SHEET PER MIL-P-5425, 0.236 THICK (STOCK, REF. DART SPEC. M-ACRYLIC-S.236)
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: ENGRAVE P/N "D412-711-101" & B/N "BXXXXX" ON THE INSIDE SURFACE OF THE BUBBLE WINDOW FLANGE, WITHIN 0.25" OF BUBBLE. USE 0.125" LETTERS TO MAX. DEPTH OF 0.005"
 - 7) WEIGHT: 8.0 lbs
 - 8) VACUUM FORMING: PER FOLIO FTA077 USING DT9640 MOLD AND DART QSI 022

RELEASED
 2017-02-07
 EN 17-512

C	CHG WALL DIMS PER TR-D412-711-1 REV. B	CP	16.04.21
B	REMOVED 1.73" DIM (ZN B4-1). SEE PREVIOUS REV. FOR DETAILS. 2.00 WAS 1.98 (ZN B3-1) REF CIR12-6	SFM	12.12.24
A	NEW ISSUE	MB	10.06.28
REV.	DESCRIPTION	BY	DATE
DESIGN	DS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	CP		
CHECKED	ND	DRAWING NO.	REV. C
MFG. APPR.	Y	D412-711-101	SHEET 1 OF 1
APPROVED	OK	TITLE	SCALE
DE APPR.	TH	REPLACEMENT WINDOW	NTS
DATE	16.04.21	COPYRIGHT © 2016 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	